



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/746,348

12/21/2000

John H. Santhoff

39129-1003

1684

44279

7590

05/19/2005

PULSE-LINK, INC.
1969 KELLOGG AVENUE
CARLSBAD, CA 92008

EXAMINER

LEVITAN, DMITRY

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/746,348	SANTHOFF ET AL.	
	Examiner	Art Unit	
	Dmitry Levitan	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Amendment, filed 12/20/04, has been entered. Claims 1-44 remain pending.

Specification

1. The disclosure is objected to because of the following informalities: blank space on page 1, reserved for the Application serial number.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. Claims 1-4, 6-10, 13-18, 20-24, 27-32, 34-38, 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke (US 5,887,054) in view of Straub (US 5,930,685) and further in view of Sand (US 6,512,746).

3. Regarding claims 1, 15, 29, 43 and 44, Burke teaches a system and a method for managing the RF channels suitability in a multiple access scheme (RF channels between RF modem 130 of the base station 20 and RF modems 230 of station 15 on Fig. 1, disclosed in the table of Fig. 6 and 4:1-50) comprising:

Obtaining information relating to noise associated with a channel (performing a test to evaluate noise on multiple channels 4:50-5:6),

Assigning rating to the channel based on the estimated potential effect (ranking the channels according to the measured channel noise 4:50-5:6), and

Storing information relating to the channel and the associated rating in a database (storing each channel ranking in a quality table 4:50-5:6).

Art Unit: 2662

Burke does not teach estimating a potential effect of the noise on a transmission quality of the channel based on the obtained information and classifying the channel into a grade of service class based on the assigned rating.

Straub teaches estimating a potential effect of the noise on a transmission quality of the channel based on the obtained information (predicting a Bit Error Rate of a channel based on measured noise of the channel 5:18-30).

Sand teaches classifying the channel into a grade of service class based on the assigned rating (classifying a connection having a voice grade service based on a measured noise characteristic Fig. 4 and 1:12-2:64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teachings of Straub and Sand to the system of Burke to improve the system quality of the voice calls, making the system more reliable.

4. In addition, regarding claim 29, Burke does not teach the software implementation of the system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement teachings of Burke in software to make the system easier to upgrade.

5. In addition, regarding claims 43 and 44, Burke does not teach the channels as wireless and ultra-wideband, however, Burke teaches using RF modems utilizing a copper pair, line 1, as transmission media.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize air as a transmission media for the system of Burke, making the channels wireless and utilizing all known RF bandwidth, including ultra-wideband, to increase the amount of available RF channels in the system.

Art Unit: 2662

6. Regarding claims 2, 16 and 30, Burke teaches measuring the noise of each channel and correlating the noise with each channel, however, Burke does not teach sampling the noise for this correlation.

Sand teaches sampling the noise for this correlation (collecting speech samples and analyzing the noise associated with the samples Fig. 4 and 2:40-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teaching of Sand to system of Burke make the channel noise measurements accurate and reliable.

7. Regarding claims 3, 4, 17, 18, 31 and 32, Burke does not teach that the step of estimating a potential effect of the noise on the transmission quality of the channel is based on the obtained information further comprises determining a projected bit error rate for the channel based on the obtained information or using interference metrics to determine the bit error rate.

Straub teaches bit error rate for the channel predicted on measured interference channel noise 5:18-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teaching of Straub to system of Burke because knowing BER of channels will ensure desired quality of the calls.

8. Regarding claims 6, 20 and 34, Sand teaches the grade of service class relates to the channel suitability for carrying a particular data type (Using GOS to satisfy the Service Level Agreements with customers 1:12-46).

Art Unit: 2662

9. Regarding claims 7, 21 and 35, Burke teaches prioritizing the channels by the grade of the service class based on the channel rating (utilizing the best channels per quality table 4:50-5:6).

10. Regarding claims 8, 22 and 36, Burke teaches storing the information related to the priority of the channels in a database (storing the channels by rank in a quality table 4:50-5:6).

11. Regarding claims 9, 23 and 37, Burke teaches obtaining the channel from the database (determining the next channel 4:50-5:6).

12. Regarding claims 10, 24 and 38, Burke does not teach testing the channel periodically to determine if the grade of the service class of the channel needs to be changed.

Sand teaches GOS measurements to be performed over continuous periods of speech on Fig. 7 and 7:66-8:11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add teaching of Sand to system of Burke, because periodic GOS calculations will make the system more robust and reliable.

13. Regarding claims 13, 14, 27, 28, 41 and 42, Burke does not teach the channels as CDMA and ultra-wideband, however, Burke teaches using RF modems utilizing a copper pair, line 1, as transmission media.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize air as a transmission media for the system of Burke, making the channels wireless and utilizing CDMA and ultra-wideband, to make the system compatible with widely used protocol and wideband and to increase the number of channels in the system.

Art Unit: 2662

14. Claims 5, 19 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand in view of Caplan (US 6,694,104).

Burke in view of Straub and Sand teaches all the limitations of the parent claims.

Burke in view of Straub and Sand does not teach the interface metrics including a position modulated error rate.

Caplan teaches the interface metrics including a position modulated error rate PPM on Fig. 12 and 12:61-13:2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interface metrics including a position modulated error rate of Caplan to the system of Burke in view of Straub and Sand to improve the system calls quality by utilizing widely used standardized modulation technique as PPM and BER.

15. Claims 11, 25 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand in view of Grube (US 5,495,483).

Burke in view of Straub and Sand teaches all the limitations of the parent claims, including receiving a request from a channel from a requestor 5:1-6, searching the database to obtain the channel to fulfill the request, next best channel 4:60-5:6, allocating the channel to the requestor, notifying the requestor to use the allocated channel 4:60-5:6.

Burke in view of Straub and Sand does not teach indicating in the database that the allocated channel is in use.

Grube teaches updating a carrier in-use database when the carrier is allocated (claim 14).

Art Unit: 2662

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the teachings of Grube to the system of Burke in view of Straub and Sand to improve the system efficiency, by managing the free and used channels.

16. Claims 12, 26 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand in view of Behrens (US 5,754,353).

Burke in view of Straub and Sand teaches all the limitations of the parent claims.

Burke in view of Straub and Sand does not teach receiving information relating to use of a channel when a user relinquishes use of the channel, determining an actual bit error rate for the relinquished channel based on the received information, assigning a rating to the relinquished channel based on actual bit error rate, classifying the channel to a grade of service class based on the assigned rating, updating the information relating to the channel stored in the database to indicate grade class of the channel based on the actual bit error rate and that the channel is available for use.

Behrens teaches the above process, including correlating the expected errors with actual errors,
Abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the feature of Behrens to the system of Burke in view of Straub and Sand to improve the system calls quality by keeping ongoing noise measurements of the system as lines are relinquished.

Response to Arguments

17. Applicant's arguments filed 12/20/04 have been fully considered but they are not persuasive.

On pages 14 and 15 of the Response, Applicant argues that teachings of Burke and Straub cannot be combined, because Burke teaches a conventional telephone system and Straub teaches high frequency wireless communications.

Examiner respectfully disagrees.

Burke system combines RF channels with a conventional telephone lines as shown on Fig. 1-4 and 2:59-3:67, creating 26 RF channels as shown in Table on Fig. 7.

Burke teaches a system utilizing RF techniques to connect telephone stations to the adapter, including RF modems and 270-400 kHz frequency band for communication channels (4:1-49).

Burke use of the line 1 as the media to transport the above channels is not essential for the system and can utilize the same RF techniques for pure wireless communication between the RF modems. The motivation for utilizing the high frequency wireless communication method of Straub in the system of Burke is to increase the amount of system channels and use available off-the-shelf high frequency wireless communication equipment.

Examiner believes that the combined system of Burke and Straub is operational require no fundamental changes in the system of Burke.

Examiner therefore believes that the cited references meet all the claims limitations and the rejection is proper.

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Patent Examiner.
05/02/05.



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600